

REMARKS

Claims 1-7, 9 and 12 are pending in this application. Claims 8 and 10-11 have been canceled without prejudice or disclaimer. Claims 1 and 9 have been amended.

35 USC §103

Applicants request reconsideration of the rejection of claims 1, 2, 5 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Japan published application no. 11-101183 (Japan '183) in view of Japan published application no. 4-203484 (Japan '484); the rejection of claims 3, 4, 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Japan '183 in view of Japan '484, and further in view of Japan published application no. 10-266881 (Japan '881); and the rejection of claims 8, 9 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Japan '183 in view of Japan '484, further in view of Japan published application no. 6-202704 (Japan '704).

Claim 1 has been amended to include the limitations of claims 8 and 11, which have been cancelled. Support for the amendments to claim 1 is found in originally filed claims 8 and 11 and also in the specification. Specifically, claim 1 has been amended to include that the signal processing system further comprises information collecting means (172, 182) for collecting various items of information including the detected environment signals from the environment detecting means (75-83); that the communication control means (70C) outputs the various items of information obtained by the information collecting means to the external terminal (150) via communication; and that the communication control means performs communication with respect to the external

terminal in a wireless manner.

According to the claimed invention, the communication control means of the signal processing system obtains alteration data for altering one or more computation elements contained in at least one of the fuel injection control means, pump torque control means and environment modifying means; and the computation element altering means alters the computation elements based on the alteration data that is obtained by the communication control means. Additionally, information collecting means collects various items of information including the detected environment signals from the environment detecting means; and the communication control means outputs the various items of information thus obtained to the external terminal. Also, the communication performed by the communication control means with respect to the external terminal is performed in a wireless manner.

In accordance with the present invention, the computation element altering means allows the computation elements to be altered based on alteration data obtained by the communication control means from the external terminal. In this way, even when the construction machine is operated in a working environment in which the setting made at the time of designating environment modifying means cannot be sufficiently adapted, it is possible to appropriately modify the fuel injection state of the fuel injection device and the maximum absorption torque of the hydraulic pump, for example, to sufficiently provide performance of the construction machine. Further, since the various items of information including the detected environment signals obtained by the information collecting means are output to the external terminal, appropriate alteration data for the

computation elements can be selected or created on the external terminal side by using the environment information obtained from the detected environment signals, so that it is possible to more appropriately modify the fuel injection state of the fuel injection device and the maximum absorption torque of the hydraulic pump. By performing the communication with respect to the external terminal in a wireless manner, it is possible to quickly perform the selection or creation of the appropriate alteration data and altering of the computation elements based on the alteration data.

More specifically, according to the present invention, construction machines such as hydraulic excavators that might possibly be operated in places around the world having various climates and conditions such as mountains, high altitudes, desert, marshland, extreme cold or hot, etc. are able to change their performance depending on the environment where the machine is operated. This is advantageous since it is not always possible to have service stations that enable settings to be altered in the vicinity of where the machine is being operated. In the present invention, by collecting the conditions of the machine by the information collecting means and sending them to the external terminal via wireless communication, selecting or creating appropriate alteration data at the external terminal side and sending such data to the machine via wireless communication, it is possible to quickly alter the settings of the machine appropriately from a remote place.

The primary reference relied upon in the 35 U.S.C. § 103(a) rejections is Japan '183, which is the prior art cited by Applicants on page 2, line 12 of the specification. Japan '484 is relied upon for disclosing communication with an external terminal. In this

regard, Japan '484 discloses connecting a personal computer 61 to an RS232 port for rewriting the internal parameters. However, according to the present invention, communication control means obtains alteration data via communication with an external terminal wherein the communication is performed in a wireless manner. Further, claim 1 requires information collecting means that collects various items of information including the detected environment signals from the environment detecting means that are output to the external terminal, which is not shown or suggested by the reference.

Japan '704 is relied upon for disclosing the collecting means for collecting various items of information. Japan '704 discloses sending electric wave signals including various control information from the transmitting operation unit 35 through the receiving operation unit 65 and controlling the control mechanisms K2, K3 which include the sensor amps 26, 30 and the control amps 27, 31 etc. based on the signal. Japan '704 does not disclose the collecting of various items of information including detected environment signals, as set forth in claim 1, and outputting the various items of information to an external terminal via communication, including performing the communication in a wireless manner as claimed by Applicants. Accordingly, the combination of Japan '183, Japan '484, and Japan '704 does not render the invention as set forth in claims 1-7, 9 and 12 unpatentable under 35 USC 103(a).

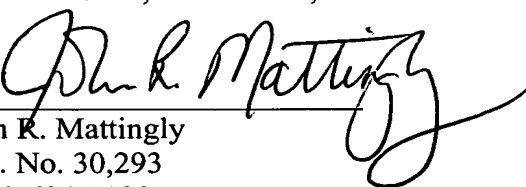
Claims 3, 4, 6 and 7 are rejected over Japan '183 in view of Japan '484 and Japan '881. Japan '881 is relied upon for disclosing environment modifying means that include fuel injection modifying and fuel injection control means and pump torque modifying and pump torque control means. Japan '881 discloses controlling a governor actuator and a

swash plate control electro-magnet proportional valve 12 depending on the environment temperature for appropriately controlling a hydraulic pump of the hydraulic driven machine to match with the environment temperature. Japan '881 does not make up for the deficiency in the combination of Japan '183, Japan '484 , and Japan '704, however, with respect to the obtaining of alteration data from an external terminal for altering one or more computation elements contained in at least one of the fuel injection control means, pump torque control means and environment modifying means, as claimed by Applicants, in combination with computation altering means for altering the computation elements based on the alteration data obtained by the communication control means. Further, the reference does not disclose or suggest the claimed information collecting means or the communication performed by the communication control means with an external terminal in a wireless manner, as claimed by Applicants. Accordingly, the rejection of claim 3, 4, 6 and 7 should be withdrawn.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,
MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

By 
John R. Mattingly
Reg. No. 30,293
(703) 684-1120

Date: August 19, 2005